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Catenularia variegata sp. nov. from southern China, and a first Chinese record of *Xylocladium clautriavii*

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Abstract—A new species, *Catenularia variegata*, is described and illustrated from specimens collected on dead stems in Fujian Province. The fungus is characterized by catenulate obovoid conidia formed on solitary, simple, straight or flexuous conidiophores. *Xylocladium clautriavii* is newly recorded from China.

Key words—hyphomycetes, taxonomy

Introduction

During our ongoing survey of microfungi associated with woody debris in tropical and subtropical forests of Fujian and Guangxi provinces, two species with morphological characteristics of the genera *Catenularia* and *Xylocladium* were collected on dead stems. *Catenularia variegata* is described here as a new species, and *Xylocladium clautriavii* represents a new record from China. Specimens are deposited in the Herbarium of the Department of Plant Pathology, Shandong Agricultural University, Taian, China (HSAUP) and the Mycological Herbarium, Institute of Microbiology, Chinese Academy of Sciences, Beijing, China (HMAS).

Catenularia variegata H.H. Li & X.G. Zhang, **sp. nov.** Fig. 1

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Differs from *Catenularia cubensis* by its larger, obovoid conidia.

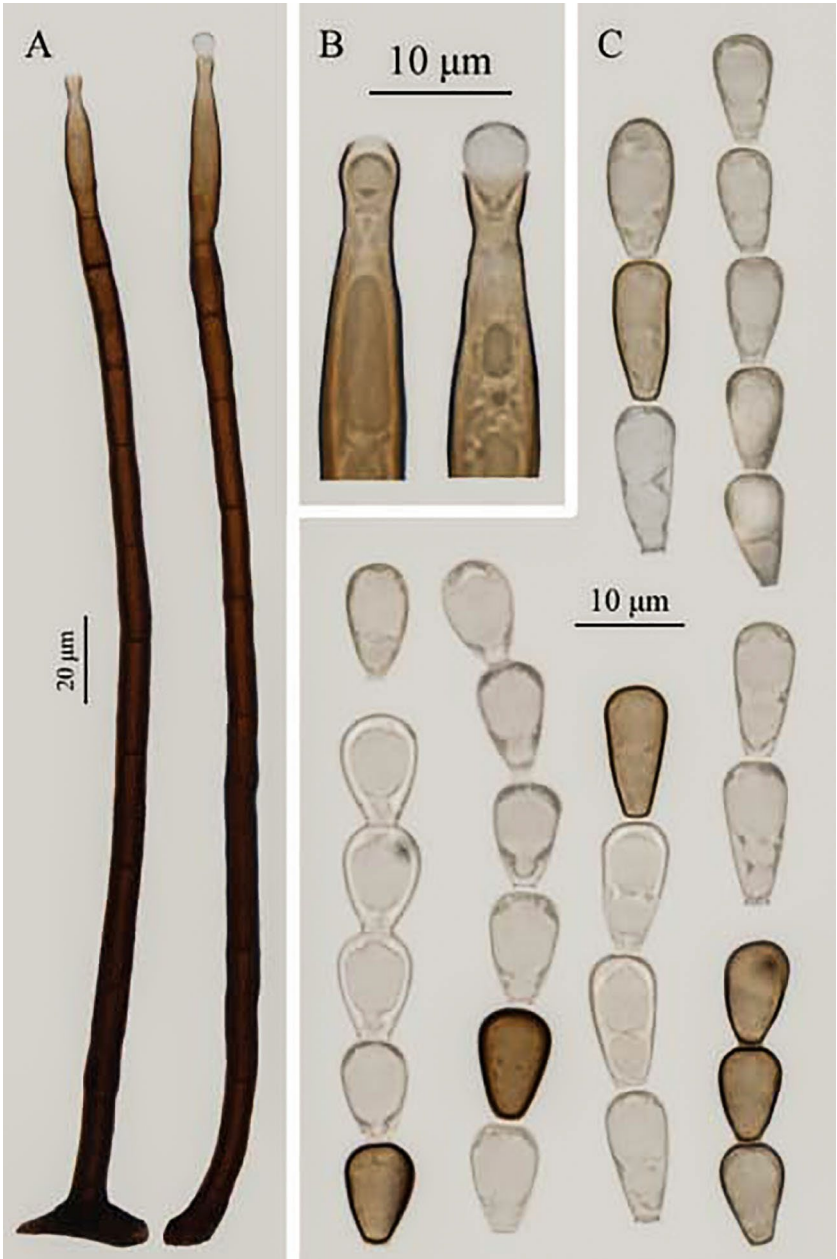

Fig. 1. *Catenularia variegata* (holotype, HSAUP H10178).
A. Conidiophores, conidiogenous cells, and conidia; B. Conidiogenous cells; C. Conidia.

Type: China, Fujian Province: Wuyishan, on dead stems of an unidentified broadleaf tree, 22 Apr. 2016, J.Y. Wang (**Holotype**, HSAUP H10178; **isotype**, HMAS 245641).

Etymology: *variegata*, in reference to the variegated conidial color.

Colonies effuse, brown, hairy. Mycelium partly immersed, partly superficial, composed of subhyaline, smooth-walled, septate hyphae. Conidiophores macronematous, mononematous, simple, erect, straight or flexuous, smooth, 10–12-septate, 150–270 × 4.5–8 μm. Conidiogenous cells monophialidic, integrated, terminal, with a distinct collarette, 22–44 μm long, 4–7 μm diam. Conidia basocatenate, aseptate, obovoid, truncate at the base, smooth, 8.5–11 μm long, 5.5–7.5 μm diam. at the distal broad end, 1.5–2.5 μm diam. at the truncate base, formed in chains of up to 6.

Comments—*Catenularia* Grove was established with *C. simplex* Grove as the type species (Hughes 1965). *Catenularia* is characterized by macronematous, mononematous, simple or flexuous conidiophores and integrated, terminal, monophialidic, collarette conidiogenous cells with solitary, chains, obovoid or cuneiform phragmoconidia. *Catenularia variegata* is morphologically similar to *C. cubensis* Hol.-Jech., which differs by its smaller, rounded-obconic conidia (Holubová-Jechová 1982).

Xylocladium clautriavii (Pat.) P. Syd., in Saccardo & Sydow, Syll. Fung. 16: 1090. 1902. Fig. 2

≡ *Ceratocladium clautriavii* Pat., Bull. Soc. Mycol. France 14: 196. 1898.

≡ *Basiodiobotrys clautriavii* (Pat.) Höhn., Sitzungsber. Kaiserl. Akad. Wiss., Wien,. Math.-Naturwiss. Cl., Abt. 1, 118: 146. 1909.

Conidiophores branched, cylindrical, pale brown, simple, 12–15-septate, 400–550 × 7–8 μm, apex in capitulum. Conidiogenous cells polyblastic, integrated, smooth, dense congested, cylindrical, pale brown, 9–16 × 2.5–5.5 μm. Conidia hyaline, ovoid, simple, smooth wall, pallidly, 4.9–5.5 × 1.5–2.5 μm.

Specimen examined: **CHINA, Guangxi Province**: Longhushan, on dead stems of an unidentified broadleaf tree, 28 Nov. 2015, J.Y. Wang (HSAUP H10129).

Comments – *Xylocladium* P. Syd. ex Lindau [a replacement name for *Ceratocladium* Pat. nom. illeg., non Corda] is typified by *Ceratocladium clautriavii* (Patouillard 1898) and is mainly characterized by branched, cylindrical, simple conidiophores and integrated, polyblastic conidiogenous cells with hyaline, single, dry, ovoid phragmoconidia (Patouillard 1898, as "*Ceratocladium*"; Lindau 1900; Saccardo & Sydow 1902; Höhnel 1909, as "*Basidiobotrys*"; Saccardo & Trotter 1913).

Fig. 2. *Xylocladium clautriavii* (HSAUP H10129).
A–D. Conidiophores; E. Conidiogenous cells; F. Conidia.

Xylocladium has been identified as the anamorphic state of some *Hypoxylon* species (Jong & Rogers 1972), and these species have been transferred to *Camillea*, whose modern diagnosis includes the production of *Xylocladium*

anamorphs [Læssøe et al. 1989); Seifert et al. (2011: 476) suggested that *X. clautriavii* may be the anamorph of *Camillea tinctor* (Berk.) Læssøe et al.]. *Camillea africana* Wakef. has been recorded from China (Teng 1996), but this species does not produce a *Xylocladium* anamorphic state and has been transferred to *Rhopalostroma* (Hawksworth 1977). No previous Chinese record has been found for *X. clautriavii* (or its synonyms and potential teleomorphs). The Chinese specimen corresponds well with the descriptions and illustrations of Jong & Rogers (1972, as "*Hypoxylon punctulatum*" and "*H. tinctor*"), and the illustration of Seifert et al. (2011: Plate 117B).

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